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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/622,563

Filing Date: July 18, 2003

Appellant(s): GRECO, J. DAVID

James F. Gottman Reg. No. 27,262
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 13, 2005 appealing from the Office action mailed April 26, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 11, 12-15, 20, 25, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerard et al. U.S. 5,689,330 in view of Lopes et al. U.S. 4,779,353.

With regard to claims 1, 2, and 20, Gerard teaches a transmitter for projecting a beam of laser light, comprising: a source of laser light (see column 3, line 3), a projection arrangement for directing the laser light from said transmitter, said projection arrangement including a level vial 24, a temperature sensor circuit for detecting error induced by temperature change where said error is a function of vial temperature of said level vial, and a temperature correction circuit responsive to said temperature sensor circuit, that adjusts said projection arrangement to compensate the direction of the laser light as a result of said error detected by said temperature sensor circuit (see column 3, line 39 to column 4, line 43).

Gerard does not teach the claimed detecting the temperature of the level vial itself. However, detecting the temperature of the vial directly is well known. Lopes teaches a level vial which the temperature is measured directly through connection to the level wires 35, 25, 30 (see col. 13 lines 23-28). Therefore, It would have been

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obvious to modify Gerard to measure the temperature of the vial itself for more accurate measurement of the level vial to generate a more accurate compensation signal.

With regard to claims 11 and 25, Gerard teaches that the projection arrangement for directing the laser light at a selected grade includes an arrangement for changing the direction of the beam until the selected grade is reached (servo motors 54), and in which the temperature correction circuit includes a circuit for providing an offset grade value to the arrangement for changing the direction of the beam until the selected grade is reached, whereby the level vial which provides an electrical signal indicating that the laser light is being projected at the selected grade (column 4, line 17-43).

With regard to claims 12 and 26, Gerard teaches that the circuit for providing an offset grade value to the arrangement for changing the direction of the beam includes a look-up table having offset grade values and vial temperatures associated with specific temperatures (column 4, lines 26-30). Gerard teaches the use of a tilt/drift v.

temperature curve that may be read as being a look-up table. Temperature values read from the sensor are "looked up" on the curve to determine the amount of offset due to the sensed temperature.

With regard to claims 15 and 29, Gerard teaches that offset grade values are unique to a specific transmitter and level vial incorporated therein (see column 4, lines 40-43).

With regard to claims 13 and 27, Gerard teaches the determination of a look-up table that comprises a tilt/drift v. temperature curve. In order to determine this curve, at least three offset values associated with at least three temperature ranges must be

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known because if any less were known, the curve of the table would not be known.

Therefore, it would have been obvious in the creation of the tilt v. temperature curve taught by Gerard to determine at least three offset values associated with at least three temperature ranges.

With regard to claims 14 and 28, Gerard teaches the calculation of grade offset associated with vial temperature and storing the values in a lookup table. However, Greco does not explicitly teach the interpolation of grade offsets and corresponding vial temperatures in the lookup table. However, it is well known in mathematics that a series of data in a table may be interpolated to determine values that are not stated expressly in the table. Therefore, it would have been obvious to interpolate the data to determine grade offsets for temperature values not expressly stated in the table.

Allowable Subject Matter

Claims 3, 4, 5-10, and 21-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 16-19 are allowable.

(10) Response to Argument

1) Regarding claims 1, 2, 5, 11-16, and 25-29.

A) Appellant argues the "It would not be possible to substitute the inclinometer of Lopes for that of Gerard, and produce a working system. Further it would not be possible to add a resistance wire from the Lopes inclinometer to the inclinometer of

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Gerard. Neither approach would produce a workable device, and this inability to combine the inclinometer makes clear that it would not be obvious to do so" (see page 7 3rd paragraph in the appeal brief. Appellant explained how both systems operate in pages 7-8 of the appeal brief.

In response: Regarding claims 1, 2, 11-15, and 25-29, examiner respectively disagrees with appellant arguments. Examiner agrees that the inclinometers in Gerard and Lopes are different, and they both operate differently. However, substituting the Gerard's inclinometer with Lopes' inclinometer is possible and obvious to one of ordinary skill in the art. One of ordinary skill in the art would not only replace Gerard's inclinometer with Lopes' by simply connecting the wires. Obviously some minor modifications are necessary. For example, knowing how Lopes' inclinometer would work and make the necessary adjustment as far as wiring, input/output signals, and software, which are minor and well known. In this case, the inclinometer in Gerard can be substituted with Lopes' inclinometer because the claims only call for a level vial and a temperature sensor circuit. Therefore, connecting the inclinometer of Lopes as shown in figure 5 (this inclinometer is connected to a microprocessor 55 as shown in figure 1), to the micro-processor 38 of Gerard (as shown in figure 2), and making the necessary adjustment would produce a working system. Secondly, examiner agrees with appellant that a resistance wire cannot be added in Gerard because of the conductive fluid, it simply would not work. However, that is not the case, the rejection is based on substituting the entire inclinometer of Gerard's with Lopes'.

Regarding claims 5 and 16, the rejections have been withdrawn.

B) Appellant argues "the motivation cited by the Examiner to combine Gerard and Lopes is clearly without support in the references, or otherwise. The Examiner indicates that this combination would be suggested by the need for more accurate measurements. There is nothing in the references, or otherwise, which suggests that the device of Gerard not sufficiently accurate', nor that the Gerard use of an extra resistance wire is of greater accuracy" (Page 8 in the brief 3rd paragraph).

In response: Examiner respectfully disagrees. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In this case, by determining the temperature of the vial itself, a more accurate inclination angle is obtained. This is obvious to one of ordinary skill in the art, the motivation is also found in Lopes; col. 8 lines 20-29.

3) Regarding claim 7-10.

The rejections have been withdrawn.

4) Regarding claims 20, 21, and 22.

A) Regarding claim 20, appellant is arguing the same arguments in 1) A) above, and further argues "Lopes measures the temperature of the vial by measuring the resistance of a resistive wire in the inclinometer - not by measuring the resistance of the fluid in the inclinometer through the same leads that are used to measure inclination"

In response: Examiner respectfully disagrees. First, Lopes does measure the resistance of the resistive wire as appellant explains which is based on the resistance of the fluid interface (see col. 8 lines 1-29); therefore, it reads on the claimed "a temperature sensor circuit for detecting the resistance of said quantity of fluid in said level vial". Secondly, appellant is arguing for limitations that are not in the claim. The argument "measuring the resistance of the fluid in the inclinometer through the same leads that are used to measure inclination" is not claimed.

Regarding claims 21 and 22, the rejections have been withdrawn.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Isam Alsomiri



December 20, 2005

Conferees:

Thomas H. Tarcza



Thomas G. Black

